National Institute of Environmental Health Sciences

Climate variability and salmonella infection in an Australian temperate climate city

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Abstract:

Poster Presentation: Background and Objectives: Food-borne diseases are public health concerns in both developed and developing countries. This paper examines the impact of weather on the transmission of Salmonella, one of the most common food-borne pathogens detected in the Australian population. Methods: A retrospective analysis was conducted on data for the period 1990-2004 for Adelaide, Australia. Seasonal Autoregressive Integrated Moving Average analysis was used for the time-series data, using weekly notifications. A Hockey Stick model was used to detect potential threshold temperatures. Results: The SARIMA model indicated that only maximum temperature (r = 0.08) and minimum temperature (β = 0.15), were significantly associated with incidence of salmonellosis, with a time lag from zero to two weeks. Other weather variables did not show any significant effect. A potential 1 degree C increase in weekly mean maximum temperatures may bring about 7 percent more Salmonella infections in Adelaide. Thresholds for the effect of both maximum and minimum temperatures (19.5 degrees C and 12.1 degrees C, respectively) were detected. Conclusions: Global warming could increase the likelihood of food-borne infections in Australia. Closer monitoring of temperature variables can prompt relevant infectious disease prevention mechanism, public health interventions can then be empowered to deal with the challenge of future climate change.

Source:
http://journals.lww.com/epidem/Fulltext/2009/11001/Climate_Variability_and_Salmonella_Infection_in_an.267.aspx

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Salmonellosis

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content